Knotting of guide wires during esophageal dilation

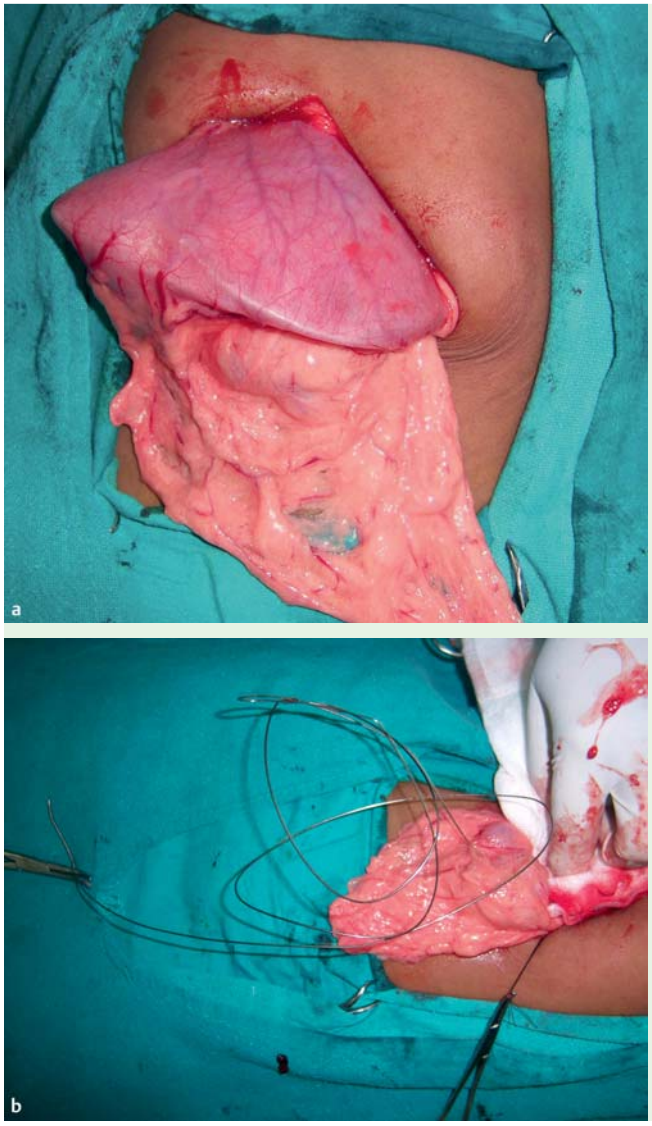

Fig. 1 **a** Coiled and knotted guide wire in the stomach. **b** Guide wire retrieved through gastrotomy.

Guide wire-directed esophageal dilation is associated with complications related to procedure and instrumentation. We report on two cases in which the guide wires could not be retrieved due to intragastric knotting and which necessitated surgical intervention.

Two children, a 3-year-old boy and a 4-year-old girl, presented separately with history of ingestion of corrosive substances and progressive dysphagia. Endoscopy revealed strictures at the lower end of the esophagus and endoscopic dilation was planned. After informed consent, esophageal dilation was performed under sedation and constant monitoring. A stainless steel unmarked guide wire was used in the first case, and a coated flexible unmarked guide wire was used in the second. The endoscopist could not retrieve the guide wires after adequate dilation. Both patients required exploratory procedures and gastrotomy in one case to retrieve the coiled and knotted guide wire (**Fig. 1**). Both patients had an uneventful recovery.

Esophageal dilation in children is performed for treatment of narrowing of the esophagus due to gastroesophageal reflux disease (GERD), caustic injury, surgery for esophageal atresia, and sclerotherapy. Savary-Gillard dilators placed over a guide wire are commonly used. Guide wires for gastrointestinal applications include a) monofilament, b) Teflon-painted coiled, and c) polymer-coated or sheathed stainless steel, nitinol, or alloy wires [1,2]. Some wires have continuous markings for visual endoscopic measurement or detection of movement [3].

Failed placement of the device and perforation are the common guide wire-related risks during procedures in the gastrointestinal tract [4]. Buckling, kinking, and knotting is more commonly seen with flexible-tip guide wires than stiff guide wires. Knotting can occur when an excessive length of wire is inserted and when there is a transfer of force on the endoscope to the guide wire.

We encountered knotting with both stainless steel and flexible-coated guide wires, probably due to insertion of an excessive length of guide wire. Knotting and kinking of the catheter can be prevented by insertion of an appropriate length of guide wire, use of stiffer wires, and gentle movement of the endoscope. We recommend the use of marked guide wires and sensitization and training of the technical assistant to avoid such complications.

Competing interests: None

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